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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/583,077	Applicant(s) SPINDLER ET AL.	
	Examiner SANTIAGO GARCIA	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18, 20-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/15/10 have been fully considered but they are not persuasive.

a. On page 9-10 applicant argues that the '990 does not teach **"the repeat command not [contain] the synchronization information"** and **"the confirm command not [contain] the synchronization information"**. Examiner respectfully disagrees. Examiner also points out that the limitations argued of claim 20 were addressed on page 11, of The Office Action dated July 21, 2011. Page 11, when addressing claim 20 recites: Raphaeli teaches, commands not containing synchronization information (Raphaeli, fig.4 tag 4, ¶[0127] "Optionally, the second wide band broadcast interrogation signal 20 is transmitted without a preamble portion..."), therefore by the examiner addressing "commands" for brevity both commands repeat and confirm were meant to be included as the other references already have these types of commands. This part of Raphaeli covers the limitation of **"the confirm command not containing the synchronization information"** since there is no preamble in this signal. Additionally Raphaeli teaches "the repeat command not containing the synchronization information" in ¶[0127] **"additionally**, the second interrogation ...**signal optionally** includes a short repeat message" therefore the second command is a repeat command that also does not contain synchronization information. Furthermore, the other references already have a repeat command

and confirm today, however the other references did not teach, that those commands do not contain synchronization references specifically.

On page, 10 applicant argues the combination of the two references is inoperable. As evidence applicant points to KSR International Co. v. Teleflex Inc., USPQ2d 1385, 1396 (2007)("If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability"). Applicant's interpretation of the principle of operation exclusion would broaden the exclusion to require only a change in operation rather than a change in the principle of operation. Simple changes in operation, i.e. modifications, are well within the scope of 35 USC 103 rejections. Examiner contends that by adding the '209 and '099 references could be easily implemented by a person having ordinary skill in the art to obtain predictable results – since by brining in '209 and '509 the change is a simple change in operation of shutting or turning on a particular component in the '510 reference- the components are still there operating differently to achieve a useful result in an RFID operation and save system's resources by not continuing to send synchronization frames.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roz (WO 99/60510) in view of Shigyo (US 6,430,209) and further in view of Raphaeli (US 2007/0109099).

As per claim 1 and 11, **Roz teaches RFID device and method for non-contact communication with a reading device via modulated electromagnetic signals that contain at least one of data and**

commands packed in data frames (Roz, page 3 lines 5-8 of official translation provided to applicant on 10/19/2009, hereon after reference as Roz), the RFID device comprising:

synchronizing means circuit configured (Roz, fig. 3a clock extraction means 312) **to effect synchronization of the RFID device with the reading device responsive to receipt of a data frame containing synchronizing information from the reading device** (Roz, fig. 3a clock extraction means 312 represents synchronizing means in the transponder or RFID tag. See also page 10, lines 20-23. It is furthermore also inherent that Roz contains synchronization means since the signal INT allows synchronization according to step b); and

a data control unit configured and arranged to (Roz, fig.3a Control Logic unit 302), **in response to receipt by the reading device of a data frame containing synchronizing information** (Roz, fig.3a The signal coming into fig.3a contains synchronization information),

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receive data frames with the synchronization information removed by the synchronizing circuit (Roz, fig.3a Clock extraction circuit 312 is coupled to 302),

wherein the RFID device is configured to receive multiple different types of commands as groups of data frames from the reading device (Roz, fig. 7b MUTE to disconnect the RFID tag after it has not collided and SHIFT would be would be a different types of command being received by the RFID tag. MUTE and SHIFT in Roz do not specifically say they do not contain synchronization information).

Roz does not specifically teach, a synchronization status test means circuit configured to detect whether the RFID device runs synchronously with the reading device and to switch on the synchronizing circuit responsive to detecting that the RFID device is not synchronized with the reading device, the data control unit configured and arranged to receive data frames from a command not containing synchronization information for effecting synchronization of the RFID device received by the reading device, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.

Shigyo Teaches, **a synchronization status test means configured to detect whether the RFID device runs synchronously with the reading device**, (Shigyo, Column 3-4, lines 66-67, Column 4 line 1 “Then ID certifying process is driven whether the ID of the present apparatus agrees with the ID carried by the sync-recovered signal in order to identify the signal.” ID of present apparatus is "RFID device" and is testing against the sync signal)

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and to switch on the synchronizing circuit responsive to detecting that the RFID device is not synchronized with the reading device (Shigyo, Fig.2 Step 12 to Step 19 if synchronization is present then there is no need for extra synchronization. If there is no synchronization then the synchronization is started in Step 13 which would be equivalent to switching on the synchronization circuit)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Shigyo's teachings of shutting sync means 302 of Roz off as an added feature of the RFID device.

The motivation to reduce power consumption of the RFID device and therefore be more efficient since sometimes the synchronization circuit would not when there is no need for that part of the system to be on.

Roz in view of Shigyo does not clearly teach, the data control unit configured and arranged to receive data frames from a command not containing synchronization information for effecting synchronization of the RFID device received by the reading device, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.

Raphaeli teaches, **a system configured and arranged to receive data frames from a command not containing synchronization information for effecting synchronization of the RFID device received by the reading device** (Raphaeli, fig.4 tag 4, ¶[0127] "Optionally, the second wide band broadcast interrogation signal 20 is transmitted without a preamble portion 24, as all of tags 4 are already synchronized to reader 2. Alternatively or additionally, the second wide band broadcast interrogation signal 20 includes a different, optionally shorter, data

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content, from that of the first wide band broadcast interrogation signal 20. Optionally, the second wide band broadcast interrogation signal 20 includes a very short repeat message.” By not containing the preamble but only a different short repeat message the system can receive commands that do not need synchronization information), **and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device** (Raphaeli, fig.4 ¶[0127] “Optionally, the second wide band broadcast interrogation signal 20 includes a very short repeat message.” The repeat message would be the command that does not contain any synchronization information that effect synchronization of the RFID device).

At the time at which the invention was made it would have been obvious to one of ordinary skill in the art to modify Roz in view of Shigyo’s control logic 302 and the RFID reader with the capability of not transmitting a synchronization frame (preamble) after the tags have already been synchronized as disclosed by Raphaeli.

The motivation would have been to save on overhead as the tags would have already been synchronized as taught by Raphaeli.

As per claim 2, Roz in view of Shigyo and Raphaeli teaches, an RFID-device as claimed in claim 1, in which the synchronizing circuit is configured in such a manner that every received data frame is to be treated as a data frame containing synchronization information (Roz, fig.3a “Clock Extraction Circuit” 302 only function is to extract the clock from every signal it receives).

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As per claim 3, Roz in view of Shigyo and Raphaeli teaches *an* RFID device as claimed in claim 1, in which the synchronization status test circuit cooperates with a data frame error counter to count the number of erroneously received data frames and in the event of exceeding of a specified error limit (Raphaeli, fig.4 Counter 82 detects the delays which are considered to be errors), to switch on the synchronizing means circuit (Shigyo, Shigyo, Fig.2 Step 12 to Step 19 if synchronization is present then there is no need for extra synchronization. If there is no synchronization then the synchronization is started in Step 13 which would be equivalent to switching on the synchronization circuit. This step would inherently caused a tag not be synchronized).

As per claim 4, Roz in view of Shigyo and Raphaeli teaches *An* RFID device as claimed in claim 3, in which the synchronization status test circuit is configured to switch off the synchronizing means circuit in the event of a correctly received data frame (Raphaeli, fig.4 after the tags have already been synchronized a preamble part is not sent. Therefore, the synchronization means is inherently shut off).

As per claim 5, Roz in view of Shigyo and Raphaeli teaches *an* RFID device as claimed in claim 1, in which the synchronization status test circuit is configured for detection of synchronization start signals in the received electromagnetic signals which synchronization start signals are transmitted outside the data frame (Roz, fig.7a the INT frame contains more than sync information), where the synchronization status test means circuit switches on the

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synchronizing means circuit on detection of a synchronization start signal (Roz, fig.3a Input circuit 300 takes in the signals and activates "clock extraction" circuit at the beginning of the frame INT. Since the frame contains synchronization information this will be the only part of the circuit where synch frames will go).

As per claim 6, *Roz* in view of Shigyo and Raphaeli teaches, RFID-device as claimed in claim 5, in which the synchronization status test circuit is configured to detect a degree of modulation of the received electromagnetic signals (Raphaeli, fig.4 Demodulator in tag 78) and to recognize as a synchronization start signal a received electromagnetic signal whose modulation factor lies in a specified range (Raphaeli, fig.4 The preamble is delayed in different ways).

As per claim 7, *Roz* in view of Shigyo and Raphaeli teaches RFID device as claimed in claim 6, in which the synchronization status test means circuit is configured to recognize as a synchronization start signal a received electromagnetic signal whose modulation factor is over 50% up to complete field disconnection (Roz, fig.3a 314 detection means detects the level of modulation of the signal since it is able to recognize when the MUTE signal which shuts the reader off is sent).

As per claim 8, *Roz* in view of Shigyo and Raphaeli teaches an RFID-device as claimed in claim 1, in which the synchronization status test circuit cooperates with a Watchdog-Timer to switch on the synchronizing means circuit after the lapsing of a specified interval,

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during which no correct data frame could be received (Roz, Roz, fig.3a 314 detection means detects the level of modulation of the signal since it is able to recognize when the MUTE signal which shuts the reader off is sent. 314 is able to detect a time period in which no signals are being received).

As per claim 10 *Roz* in view of Shigyo and Raphaeli teaches an RFID-device as claimed in claim 1, in which the RFID- device is configured as a transponder (Raphali, fig.3 showing RFID reader receiving and transmitting)

Regarding claims 11-18, which inherits the limitations of claim 1-8 and 10, the claimed method including the features corresponds to subject matter mentioned in the rejection of claim 1-10 is applicable hereto.

3. Claims 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roz (WO 99/60510) in view of Raphaeli (US 2007/0109099).

As per claim 20, Roz teaches, An anti-collision method for determining a number of transponders in an effective area of a reading device, the reading device communicating with the transponders without contact by means of modulated electromagnetic signals, (Roz, fig.1 and Abstract)
which contain data and or commands packed in data frames (Roz, fig. 7b INT is the data frame which has data or commands;) **in which the reading device transmits an inventory**

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command for determination of the transponders present in its effective area, by which command each transponder present in the effective area of the reading device is asked to transmit a response with a unique identification number to the reading device, (Roz

“Generally, you unit of reading 20 with the possibility of typically questioning the Tri transponders put in awakening by emitting a signal of interrogation INT comprising in a modulation of the electromagnetic field 1. This signal of interrogation INT indicates to the TRi transponders that the unit of reading 20 wishes to receive a signal of REPj

answer including understanding required information, typically an identifying code of the transponder.” By the reader needing to understand the ID code the reader is doing invenorizing.)

transmitting by the reading device transmits a repeat command in case there are mutually colliding responses from several7 transponders (Roz, fig.5: 510 Collision interrogator to 511

Indicates the collision to 512 Emits the SHIFT signal to 518 which repeats the command to synch again.) **which command causes the transponders to send the response once more**

(Roz, 518 causes fig 6 609 to occur more times.) **and in which the reading device on the**

transponder whose response was received without errors (Roz Fig 5: 510 collision detect

going to 560 SLOT control unit going to 514 memory then going to 516 which emits response without errors.), **sends a Confirm command, which causes this transponder not to react to**

repeat commands, (Roz, fig. 5: 516 which emits response without errors to fig.6 612 receiving the repeat command and going to 614 causing the tag not to react again. See also fig.3a element

314 detection means is able to detect the confirm command by seeing there is no signal coming into the reader)

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in which the reading device continues transmission of Confirm commands and Repeat commands,(Roz fig.5 looping from 516 confirm command or 511 repeat command looping back to 502 INT emission.) **until no transponder responds any longer within a specified time interval,** (Roz, Fig.7b shows the signal MUTE which is repeated in the specified interval of the SLOTS1-SLOTS8 until it finds no more success frames being transmitted.) and the confirm command does not contain any synchronization information (Roz, fig. 7b MUTE command goes to element 314 of fig.3a which inhibits the tag at least temporally).

Roz does not clearly teach, and are command not containing the synchronization information, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.

Raphaeli teaches, commands not containing the synchronization information (
 Raphaeli, fig.4 tag 4, ¶[0127] "Optionally, the second wide band broadcast interrogation signal 20 is **transmitted without a preamble portion 24, as all of tags 4 are already synchronized to reader 2.** Alternatively or additionally, the second wide band broadcast interrogation signal 20 includes a different, optionally shorter, data content, from that of the first wide band broadcast interrogation signal 20. Optionally, the second wide band broadcast interrogation signal 20 includes a very short repeat message." By not containing the preamble but only a different short repeat message the system can receive commands that do not need synchronization information

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, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device

(Raphaeli, fig.4 ¶[0127] “Optionally, the second wide band broadcast interrogation signal 20 includes a very short repeat message.” The repeat message would be the command that does not contain any synchronization information that effect synchronization of the RFID device).

RFID device received by the reading device (Raphaeli, fig.4 tag 4, ¶[0127]

"Optionally, the second wide band broadcast interrogation signal 20 is **transmitted without a preamble portion 24, as all of tags 4 are already synchronized to reader 2.** Alternatively or additionally, the second wide band broadcast interrogation signal 20 includes a different, optionally shorter, data content, from that of the first wide band broadcast interrogation signal 20. Optionally, the second wide band broadcast interrogation signal 20 includes a very short repeat message.” By not containing the preamble but only a different short repeat message the system can receive commands that do not need synchronization information), **and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.**

At the time at which the invention was made it would have been obvious to one of ordinary skill in the art to modify Roz's control logic 302 and the RFID reader with the capability of not transmitting a synchronization frame (preamble) after the tags have already been synchronized as disclosed by Raphaeli.

The motivation would have been to save on overhead as the tags would have already been synchronized as taught by Raphaeli.

As per claim 21, Roz in view of Raphaeli teaches, *an* anti-collision method as claimed in claim 20, in which the transponders respond to the reading device at randomly selected delays (Raphaeli, ¶[008] “The random periods are longer than the transmitted signals, such that response signals of transmitters selecting different random delays do not collide.”).

As per claim 22, Roz in view of Raphaeli teaches *An* anti-collision method as claimed in claim 21, **An anti-collision method as claimed in claim 21, in which the delay selectable by the transponder lies in a round, (Roz, Fig. 7b) which has a number of time slots which are pre-defined and possibly variable by the reading device with durations, (Roz, Fig. 7b SLOT1-SLOT8 are pre-defined. Thus, in accordance with what is schematized in figure 4, following the emission of the signal of interrogation INT by the unit of reading 20, a whole of N fentres SLOT_k (k=1 with N) is generated. Each TR_j transponder includes/understands means to select, according to a random process, a fentre of particular answer among 1 ' whole of N fentres of available SLOT_k answers during which it will emit its signal of REPI answer.”) which are defined and possibly variable by the reading device. (Roz, “INT by the unit of reading 20, a whole of N fentres SLOT_k (k=1 with N) is generated.”)**

As per claim 23, Roz in view of Raphaeli teaches, *An* anti-collision method as claimed in claim 22, **in which the reading device transmits nothing more than a Confirm command or a Repeat command per time slot, where a time slot is optionally early scheduled by these**

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commands (Roz, fig.7b, MUTE is confirm command, and another INT would be another round, this would be the repeat).

As per claim 23, Roz in view of Raphaeli teaches, *an* anti-collision method as claimed in claim 22, in which the repeat command triggers the transponders to start a new round (Roz, fig.7b, MUTE is confirm command, and another INT would be another round, this would be the repeat).

As per claim 24, Roz in view of Raphaeli teaches An anti-collision method as claimed in claim 22, **in which the reading device sends a Next Time Slot command**, (Roz, Fig.5 step 508 determines if there is a response from a tag.) **if no transponder responds within a time slot**, (Roz, Fig.5 and Fig.7b to the right “non” means no. Meaning if there is no REP which is the response from the transponder the cycle goes to triggering the SHIFT to get to the next time slot.) **where the Next-Time slot command is preferably sent in a data frame with synchronization information.** (Roz, Fig. 5 “to emit a signal of interrogation (INT) allowing synchronization of the aforesaid transponders (TRj).” INT also shown in figure 7b which is the synch frame. After no transponder has been detected the flow chart goes back to INT which is the synchronization frame.)

As per claim 26, Roz in view of Raphaeli teaches, *an* anti-collision method as claimed in claim 22, in which the anti-collision method is scheduled if no transponder responds within a round (Roz, Fig.5 If no transponders respond in 508 then that signal gets sent to 504 which asks if it is the end of the round in which case triggers 502 which sends out INT starting another round which is part of the anti-collusion method).

Allowable Subject Matter

4. Claims 9 and 19 are allowed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANTIAGO GARCIA whose telephone number is (571)270-5182. The examiner can normally be reached on MONDAY- FRIDAY 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/SG/

/CHIEH M FAN/

Supervisory Patent Examiner, Art Unit 2611